Department of Defense
Animal Care and Use Programs 1995

Report to the Senate Armed Services Committee and the House of Representatives National Security Committee

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Appendix A

DoD Directive on Animal Use

Department of Defense
DIRECTIVE

April 17, 1995
NUMBER 3216.1

DDR&E

SUBJECT: Use of Laboratory Animals in DoD Programs

References: (a) DoD Directive 3216.1, "Use of Animals in DoD Programs," February 1, 1982 (hereby canceled)
(b) Title 9, Code of Federal Regulations, "Animals and Animal Products," Chapter 1, Subchapter A, "Animal Welfare," Parts 1, 2, and 3
(c) Public Law 101-511, Department of Defense Appropriations Act for Fiscal Year 1991, Section 8019, Title 10 United States Code, Section 2241
(d) Sections 2131 through 2156 of Title 7, United States Code "The Laboratory Animal Welfare Act of 1966," as amended
(e) through (f), see enclosure 1.

A. REISSUANCE AND PURPOSE

1. Reissues reference (a) to update policy governing activities using animals within the Department of Defense.

2. Designates the Secretary of the Army as the DoD Executive Agent to develop and issue Service regulations to implement this Directive.

B. APPLICABILITY

This Directive applies to the Office of the Secretary of Defense, the Military Departments, the Uniformed Services University of the Health Sciences, and the Defense Agencies (hereafter referred to collectively as "DoD Components") that perform or sponsor activities using animals.

C. DEFINITIONS

Terms used in this Directive are defined in enclosure 2.

D. DoD POLICY

1. Federal statutes, regulations, and publications that provide national standards and guidance for the acquisition, transportation, housing, control, maintenance, handling, protection, treatment, care, use, and disposal of animals shall be applicable to all activities using animals. A summary of the applicable documents cited as references is in enclosure 3.

2. Animals shall be legally obtained from suppliers licensed by the U.S. Department of Agriculture (USDA) in accordance with

reference (b) unless specifically exempted from the licensing requirements stated in reference (b).

3. DoD organizations or facilities maintaining animals for use in research, testing or training shall apply for accreditation by the American Association for Accreditation of Laboratory Animal Care (AAALAC).

4. Alternative methods to animal species shall be considered, whenever possible, if such alternatives produce scientifically valid or equivalent results to attain the research testing and training objectives.

5. The purchase or use of dogs, cats, or nonhuman primates in research conducted for developing biological, chemical or nuclear weapons is prohibited.

6. The purchase or use of dogs, cats, or nonhuman primates for inflicting wounds from any type of weapon(s) to conduct training in surgical or other medical treatment procedures is prohibited. (reference (c)).

7. DoD organizations or facilities wishing to hold training programs using animals, such as advanced trauma life support (ATLS) training programs, shall have the training protocol reviewed and approved by a duly constituted Institutional Animal Care and Use Committee (IACUC) in accordance with references (d) and (e) and paragraph D.8. of this Directive to ensure the humane use of animals. DoD organizations or facilities conducting ATLS training that require housing of animals for short periods of time shall ensure adequate care and shall have the animal housing facilities inspected and approved by a veterinarian prior to receipt of the animals.

8. All proposals or protocols for animal experiments or demonstrations in RDT&E, clinical investigation, instructional, or training programs conducted or sponsored by a DoD organization or facility shall be reviewed and approved by a duly constituted IACUC composed of a minimum of five members. There shall be at least one non-scientific member on each IACUC. In addition, there also shall be a member who represents the general community interest and is non-affiliated with the facility sponsoring IACUC. The non-affiliated and the non-scientific membership can be filled by the same person. To ensure community representation at each meeting and inspection, an alternate to the non-affiliated member shall be designated for IACUCs having a single non-affiliated membership. Since the DoD IACUCs perform a Government function in an approval process and do not serve merely as an advisory body, the non-affiliated and the non-scientific member(s) to DoD IACUCs shall either be a Federal

employee, with demonstrated commitment to the community or a consultant consistent with the requirements established by reference (f).

9. A headquarters-level administrative review shall be conducted for proposals involving the use of non-human primates conducted or sponsored by subordinate activities of the DoD Component for conformance with all applicable Federal regulations and policies. A DoD component may delegate this responsibility to another DoD component for purposes of efficiency and consolidation of functional offices.

10. The DoD Components shall coordinate and cooperate in the transfer of Government-owned nonhuman primates between facilities to maximize conservation and proper utilization.

11. Proposals intending to use chimpanzees must be further reviewed and approved by the Interagency Animal Model Committee, which coordinates national priorities for research utilization of this species.

12. The DoD components that sponsor animal based research, testing, and training under a DoD grant or contract shall ensure that:

a. all extramural research proposals using live animals shall be administratively reviewed by a DoD veterinarian trained or experienced in laboratory animal science and medicine before grant or contract award.

b. the most recent USDA inspection reports are provided or obtained for the facility under consideration for a research contract or grant using animals, and that during the term of the award, the most recent USDA inspection reports be reviewed on an annual basis.

c. a DoD veterinarian trained or experienced in laboratory animal science and medicine shall conduct an initial site visit to evaluate animal care and use programs at contracted facilities conducting DoD-sponsored research using non-human primates, marine mammals, dogs, cats, or proposals deemed to warrant review. The initial site visit shall occur within 6 months of when the facility has taken delivery of the animals under DoD contract or grant award. Any facility receiving a DoD-funded grant or contract for animal based research shall notify the DoD component sponsor and shall have a site inspection within 30 days of notification of loss of AAALAC accreditation for cause, or notification that the facility is under USDA investigation. Site inspections for cause shall evaluate and

ensure the adequacy of animal care and use in DoD-sponsored programs, and provide recommendations to the sponsoring DoD component about continued funding support of the research.

13. In the case of differences between the standards of care and use of animals as cited in enclosure 3, the most stringent standard shall apply.

14. Activities covered by this Directive that are performed or sponsored in foreign countries shall be conducted in accordance with applicable U.S. statutory requirements, and regulations and standards of the host country. If differences exist between U.S. and host country regulations or standards, unless prohibited by the host country, the more stringent standard shall apply.

15. While not specifically addressed in this Directive, ceremonial, recreational, and working animals, such as military working dogs, shall be treated in a humane manner.

16. Personnel with complaints of violation of this directive shall report such violations to either of the following members of the organization or facility: IACUC chairperson, attending veterinarian, the facility Commander, or Inspector General. The IACUC shall review and, if warranted, investigate all reports of complaints of animal use or noncompliance with 7 U.S.C. 2131-2 of reference (d), applicable Directives, and regulations.

E. RESPONSIBILITIES

1. The Director, Defense Research and Engineering (under the Under Secretary of Defense for Acquisition and Technology) or designee shall:

a. Issue policy and procedural guidance concerning animal use consistent with all applicable Federal regulations and policies.

b. Designate a DoD representative to the Interagency Research Animal Committee who is a veterinarian of appropriate rank or grade and experience, and preferably also a diplomate of the American College of Laboratory Animal Medicine.

c. Establish the Joint Technical Working Group (JTWG) to act as the central advisory committee to the Armed Services Biomedical Research Evaluation and Management (ASBREM) Committee on all matters on the care and use of animals for research, testing, clinical investigation, or training within the Department of Defense. The co-chairpersons of the ASBREM Committee shall designate the chairperson of JTWG.

2. The Heads of the DoD Components shall:

a. Establish appropriate mechanisms to monitor compliance with this Directive and applicable Federal statutes and regulations.

b. Establish offices or facilities that shall serve as reviewing or approving authorities of animal use proposals from subordinate activities and extramural facilities proposing research under contract or grant.

c. Provide members to JTWG as required.

d. Designate the appropriate office(s) within the DoD Component that shall perform the headquarters level administrative review of proposals requiring the use of non-human primates and shall serve as the office where exemptions under paragraph D.2. above may be approved.

e. Support, and as necessary, ensure the development of animal care and use training programs for researchers and members of the IACUC, and certification programs for all personnel involved in the care, use, and treatment of animals.

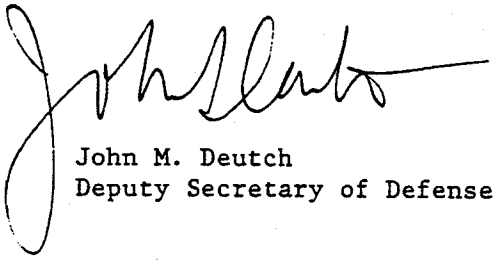
3. The Secretary of the Army shall:

a. As Executive Agent, develop and issue, in consultation with the other DoD Components, joint Service regulations to implement this Directive.

b. Designate the Commander, U.S. Army Veterinary Command/Director, DoD Veterinary Services Activity, a Field Operating Agency of the Army, Office of the Surgeon General who shall serve as a consultant to the Assistant Secretary of Defense for Health Affairs and the Director, Defense Research and Engineering for technical and professional matters related to this Directive.

F. EFFECTIVE DATE

This Directive is effective immediately.



John M. Deutch
Deputy Secretary of Defense

Enclosures - 3
1. References
2. Definitions
3. Guidance Documents

(e) National Institutes of Health (NIH) Publication No. 86-23, "Guide for the Care and Use of Laboratory Animals", United States Department of Health and Human Services, National Institutes of Health, Revised 1985.
(f) Title 5, United States Code, Section 3109.

DEFINITION OF TERMS

1. Animal. - Any dog, cat, non-human primate, guinea pig, hamster, rabbit or any other live vertebrate animal, which is being used or is intended for use for research, training, testing, or experimentation purposes. For this Directive, it includes birds, rats of the genus Rattus and mice of the genus Mus bred for use in research, training, testing or experimentation purposes. The term excludes animals used for ceremonial or recreational purposes, military working animals, and animals intended for use as livestock and poultry as food or fiber; or, livestock or poultry used or intended for use for improving animal nutrition, breeding, management, or production efficiency, or for improving the quality of food or fiber.

2. Clinical Investigation. - All activities directed towards clinical research conducted principally within medical treatment facilities. The Clinical Investigations program is part of the Defense Health Program of the Assistant Secretary of Defense (Health Affairs) and is supported by Major Force Program 8 (MFP-8) funds.

3. Instructional Program. - All educational and training activities, except training of ceremonial and recreational animals and training associated with military working animals or survival skills training.

4. Research, Development, Test, and Evaluation. - All activities which form the RDT&E program of the Director, Defense Research and Engineering (DDR&E) and are supported by Major Force Program 6 (MFP-6) funds.

5. Alternatives. - Any system or method that covers one or more of the following: replacing or reducing the number of laboratory animals required for an investigation by computer simulation, cell culture techniques, etc; or, refining an existing procedure or technique to minimize the level of stress endured by the animal.

6. DoD Sponsored Programs. - All proposals or de signs for animal experiments or demonstration in RDT&E, clinical investigation, or instructional programs conducted or funded by grant, award, loan, contract, or cooperative research and development agreement (CRADA).

ADDITIONAL FEDERAL STATUTES, REGULATIONS, AND GUIDELINES ON THE USE OF ANIMALS

The following documents provide national standards and guidance for the protection, treatment and use of animals:

a. **Animal Welfare Act** (Title 7, United States Code, Sections 2131-2158, as amended, and Title 9, Code of Federal Regulations, Parts 1-4, implementing rules and regulations). Administered by Regulatory Enforcement and Animal Care (REAC), Animal and Plant Health Inspection Service (APHIS) of the Department of Agriculture. Requires licensing of dealers, identification of animals, maintenance of records, submission of reports, establishment of an Institutional Animal Care and Use Committee (IACUC), and compliance with standards for the humane handling, care, treatment, and transportation of animals by dealers and research facilities.

b. **Endangered Species Act of 1973** (Title 16, United States Code, Sections 1531-1543, as amended, and Title 50, Code of Federal Regulations, Parts 10-14 and 217-227, implementing rules and regulations). Provides a program under the U.S. Fish and Wildlife Service, Department of Interior, for conserving threatened and endangered species. Requires import/export permits, maintenance of records, and submission of reports on the care and handling of endangered, threatened, and conserved species.

c. **Marine Mammal Protection Act** (Title 16, United States Code, Sections 1361-1384, as amended, and Title 50, Code of Federal Regulations, Parts 10-14 and 216-227, implementing rules and regulations). Provides a program under the Departments of Commerce (National Marine Fisheries Service) and Interior (U.S. Fish and Wildlife Service) for the protection of marine mammals and marine mammal products. Requires acquisition permits, maintenance of records, submission of reports, and inspections on the care and handling of marine mammals.

d. **Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)** (TIAS 8249, as amended, and Title 50, Code of Federal Regulations, Part 23, implementing rules and regulations). CITES is a treaty involving 106 signatory nations administered in the United States by the Fish and Wildlife Service of the Department of the Interior. CITES regulates the import and export of imperiled species covered by the treaty but imposes no restrictions or control on interstate shipments.

e. **Lacey Act** (Title 18, United States Code, Section 42, as

amended, and Title 50, Code of Federal Regulations, Part 16 and Subpart B, implementing rules and regulations). A program under the U.S. Fish and Wildlife Service, Department of the Interior. Prohibits the importation of certain wild animals or their eggs if the Secretary of the Interior determines that they are injurious to humans, the interest of agriculture, or other specified national interests.

f. **Guide for the Care and Use of Laboratory Animals.** Public Health Service, National Institutes of Health, NIH Publication No. 86-23, Revised. Provides guidelines for institutional policies, husbandry, requirements, veterinary care, and physical plant requirements for programs involving the care and use of laboratory animals.

g. **Guide for the Care and Use of Agricultural Animals in Agricultural Research and Teaching.** Published by the Consortium for Developing a Guide for the Care and Use of Agricultural Animals in Agricultural Research and Teaching, 309 West Clark Street, Champaign, IL 61820, March 1988. Provides guidelines for the care and use of the major agricultural animal species in the United States in research and teaching.

Appendix B

Department of Defense (DoD) Policy for Compliance with Federal Regulations and DoD Directives for the Care and Use of Laboratory Animals in DoD-Sponsored Programs

OFFICE OF THE SECRETARY OF DEFENSE

WASHINGTON, D.C. 20301

10 APR 1995

MEMORANDUM FOR ASSISTANT SECRETARY OF THE ARMY (M&RA)
ASSISTANT SECRETARY OF THE ARMY (RDA)
ASSISTANT SECRETARY OF THE NAVY (M&RA)
ASSISTANT SECRETARY OF THE NAVY (RDA)
ASSISTANT SECRETARY OF THE AIR FORCE (MRAI&E)
ASSISTANT SECRETARY OF THE AIR FORCE (SAF/AQ)
PRESIDENT, UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES
DIRECTOR, DEFENSE NUCLEAR AGENCY
DIRECTOR, ADVANCED RESEARCH PROJECTS AGENCY

SUBJECT: Department of Defense (DoD) Policy for Compliance with Federal Regulations and DoD Directives for the Care and Use of Laboratory Animals in DoD-Sponsored Programs

References:

(a) Title 7, United States Code, Sections 2131-2156, The Laboratory Animal Welfare Act of 1966, PL 89-544, as amended PL 94-279, 1976, and PL 99-198, 1985.

(b) Review of the Use of Animals in the Department of Defense Medical Research Facilities, Inspector General Department of Defense, February 1994.

(c) Review of the Use of Animals in Department of Defense Contract Research Facilities, Inspector General Department of Defense, August 1994.

Definition:

(a) Animal means any dog, cat, non-human primate, or any other live vertebrate animal which is being used or is intended for use for research, training, testing, or experimentation purposes. For this Policy Guidance, it includes birds, rats of the genus Rattus and mice of the genus Mus bred for use in research, training, testing or experimentation purposes. The term excludes animals used for ceremonial or recreational purposes, military working animals, and animals intended for use as livestock and poultry as food or fiber; or, livestock or poultry used or intended for use for improving animal nutrition, breeding, management, or production efficiency, or for improving the quality of food or fiber.

(b) DoD-Sponsored programs means any study, proposal, or design for animal experimentation or demonstration in Research Development, Test, and Evaluation (RDT&E), clinical investigation, or instructional program conducted or funded by grant, award, loan, contract, or cooperative research and development agreement (CRADA).

Reference (a) has been accepted by the Department of Defense (DoD) in the development of DoD Directives and policy guidance. References (b) and (c) contain recommendations which have been endorsed by the Department. The purpose of this policy memorandum is to implement the recommendations contained in references (b) and (c).

DoD components that utilize animals in DoD-supported programs shall be aware of the attached DoD Directive 3216.1, "Use of Laboratory Animals in DoD Programs," appended as attachment (1). It is currently pending signature and will supersede the current DoD Directive 3216.1 dated February 1, 1982. Additional policy guidance is as follows:

a) In DoD component facilities conducting animal-based programs, an alternate to the non-affiliated member of the Institutional Animal Care and Use Committee (IACUC) shall be designated for IACUCs having a single non-affiliated member. The non-affiliated member(s) or alternates must receive a minimum of eight hours training. At least four hours of the training shall address the regulatory responsibilities and proper techniques on animal protocol review processes. An additional minimum of four hours of training will address humane care and ethics issues dealing with animal use. All DoD Components conducting animal use programs as defined shall have training programs for non-affiliated IACUC members in place by 1 October 1995.

b) All DoD component facilities maintaining animals used in research, testing, or training shall apply for accreditation by the American Association for the Accreditation of Laboratory Animal Care (AAALAC). The Office of the Director, Environmental and Life Sciences, Pentagon Room 3D129, Washington, D.C. 20301-3030 is the central point of contact to maintain cognizance over the application or continuation of AAALAC accreditation. All DoD facilities shall furnish copies of AAALAC accreditation status to that office. Absence of accreditation shall be explained with a plan of action and milestones to obtain accreditation.

The following recommendations from the DoD Inspector General have been adopted as policy and shall be fully implemented by DoD Components which use animals in DoD-sponsored programs.

a) The DoD standard protocol format appended as attachment (2) shall be implemented by 1 October 1995. All intramural protocols involving animal use submitted after 1 October 1995 shall use the standard format. Extramural contractor proposal submissions need not use the standard format; however, the contractor shall provide all pertinent information contained in the standardized protocol format.

b) All DoD component facilities that utilize animals in research, testing and training shall implement the DoD standardized semi-annual program review checklist appended as attachment (3) immediately. Accompanying the checklist is a detailed outline of program review as contained in the NIH Guide for the Care and Use of Laboratory Animals. The Guide is the primary reference which is used by AAALAC in the accreditation process. The checklist shall be completed as a part of the semiannual IACUC program and facility review process. The semi-annual IACUC reports shall contain a copy of the checklist or indicate that the checklist was used as the basis of the program and facility review. A majority of members of the IACUC shall sign the report and include a statement indicating the presence or absence of minority opinions.

c) Commanders, and Directors of DoD component facilities shall support and, as necessary, develop animal care and use training programs for personnel associated with animal use programs, and encourage certification for all personnel involved in the care, use and treatment of laboratory animals.

As of 1 October 1995, DoD components shall report all animal-based protocols in the required format redacted for public release to the Defense Technical Information Center (DTIC). Selected fields of the DTIC report will be made accessible to the public through the INTERNET.

Edward D. Martin
Principal Deputy,
Assistant Secretary of
Defense (Health Affairs)

Joseph V. Osterman
Director, Environmental
and Life Sciences

Attachments:

(1) Pending DoD Directive 3216.1
(2) Standard Protocol Format
(3) Standard Semi-annual Checklist

Appendix C

DoD Standard IACUC Protocol Format Instructions

ALL DOD ANIMAL USE PROTOCOLS MUST UTILIZE THIS DOD STANDARDIZED FORMAT. This protocol format only includes those requirements of the Animals Welfare Act, American Association for the Accreditation of Laboratory Animal Care, Federal Regulations, DoD Directives and DoD Policy relating to animal use. Any requirements that are specific to a given Service, Command, or locale (such as all budgeting information, local coordinating requirements, specific scientific review requirements etc.) should be added by each organization in front or behind this standardized format. Adding some information within the format is acceptable to meet local needs as long as the standard format is maintained. In other words, all of the labelled paragraphs and subparagraphs should remain in the same relative order with the added information being similar or complementary to the information requested. It is important to note that this standardized protocol format does not in any way prohibit local organizations from using any (or all) of their current animal use protocol. It does mandate that all of the information required in this DoD standardized format be answered as a part of the organization's animal use protocol in the order listed in this format.

****

THIS DOCUMENT IS INTENDED TO BE AN AID IN THE PREPARATION OF A DOD ANIMAL USE PROPOSAL. IT IS A COMPANION DOCUMENT TO AN IDENTICAL PROTOCOL FORMAT OR TEMPLATE THAT DOES NOT HAVE THE WRITTEN EXPLANATION FOR INDIVIDUAL PARAGRAPHS. THEY ARE DESIGNED TO BE USED ON A WORD PROCESSING PROGRAM, i.e., WordPerfect, WordStar, MicrosoftWord, WordPerfect for Macintosh, etc., SO THAT YOU ARE NOT LIMITED BY THE SPACE PROVIDED, AND SUGGESTED CHANGES OR MODIFICATIONS CAN BE QUICKLY AND EASILY MADE. USING A WORD PROCESSOR MAKES THIS FORMAT A "FILL-IN-THE-BLANKS" EXERCISE. THE EXPLANATIONS OR INSTRUCTIONS MAY BE BLOCKED OUT AND DELETED IF IT IS MORE CONVENIENT TO USE THIS FORM RATHER THAN THE OUTLINE AVAILABLE WITHOUT THE EXPLANATIONS. SPECIFIC RESPONSES REQUESTED IN THE FORMAT ARE A RESULT OF THE REQUIREMENTS OF THE ANIMAL WELFARE ACT (AWA), DOD REGULATIONS, OR ANIMAL WELFARE GUIDELINES. EACH PARAGRAPH SHOULD HAVE A RESPONSE. PORTIONS OF THE PROTOCOL FORMAT THAT ARE NOT APPLICABLE TO YOUR PARTICULAR PROTOCOL, i.e., NO SURGERY OR NO PROLONGED RESTRAINT, SHOULD BE MARKED N\A. IF SOPs OR OTHER DOCUMENTS ARE READILY AVAILABLE TO THE IACUC, THEY MAY BE REFERENCED TO ASSIST IN THE DESCRIPTION OF SPECIFIC PROCEDURES. IT IS CRITICAL THAT ONLY ANIMAL STUDIES OR PROCEDURES DOCUMENTED IN AN APPROVED PROTOCOL ARE PERFORMED IN THE ORGANIZATION. ADDITIONALLY, P.I.s OR OTHER ANIMAL USERS SHOULD KEEP ACCURATE EXPERIMENTAL RECORDS, AND BE ABLE TO PROVIDE AN AUDIT TRAIL OF THEIR ANIMAL EXPENDITURES AND USE THAT CORRELATES TO APPROVED PROTOCOLS.

****

PROTOCOL COVER SHEET: Requires a minimum of three signatures to include: the Primary Investigator, the individual responsible for scientific review and the Attending Veterinarian. In addition, the signature from the individual performing the statistical review on this cover sheet is recommended. If no signature block is present for a person who does the statistical review, then the following statement must be present on the protocol cover sheet. "A person knowledgeable in statistics has reviewed the experimental design." This Protocol Cover Sheet can also hold any additional information deemed necessary by the organization (Co- investigators, Department/Division Chief, Coordinating Departments, IACUC Chair, Biosafety Review etc.)

PROTOCOL TITLE:

PRINCIPAL INVESTIGATOR:
(Signature Required) _____
(Principal Investigator)

SCIENTIFIC REVIEW: Signature verifies that this proposed animal use protocol has received appropriate peer scientific review, and is consistent with good scientific research practice. (No response is required to the title paragraph of this section)

(Signature Required) _____
(Research Unit Chief/Directors signature)

ATTENDING/CONSULTING VETERINARIAN: (Example) The attending/consulting veterinarian has reviewed the protocol and was consulted in the planning of procedures that require veterinary input, i.e., an unalleviated pain procedure. In addition, the veterinarian/veterinary medicine department has assisted with coordination for veterinary support to the protocol. (No response is required to the title paragraph of this section)
(Signature Required) _____
(Attending/Consulting Veterinarian)

STATISTICAL REVIEW: A person knowledgeable in statistics has reviewed the experimental design. (No response is required to the title paragraph of this section) (Inclusion of Signature Block is Recommended, but Optional)

_____
(Statistician)

OTHERS: You may wish to add specific additional offices or signature blocks for individuals responsible for coordination or compliance issues pertinent to your facility or operation. (i.e. Co-investigators, Coordinating Departments, IACUC Chair, Biosafety Review etc.)

PROTOCOL TITLE:

PRINCIPAL INVESTIGATOR:

CO-INVESTIGATOR(S):

I. NON-TECHNICAL SYNOPSIS: A brief, narrative description of the proposal or idea that is easily understood by non-scientists.

II. BACKGROUND:

A. Background: This should include a brief statement of the requirement or need for the information being sought. Lengthy explanations are not required. Typically, the "literature or the experience that led to the proposal will be briefly reviewed" (AR 70-18), and a description of the general approach should be provided. Unnecessary duplication of effort should be strictly avoided.

B. Literature Search: This search must be performed to prevent unnecessary duplication of previous experiments. A search of Federal Research in Progress (FEDRIP) and DTIC databases or their equivalent is required for DOD funded research. An additional search of the scientific literature (MEDLINE, GRATEFUL MED, MEDLARS, AWIC, etc.) is highly recommended.

1. Literature Source(s) Searched:

2. Date and Number of Search:

3. Key Words of Search:

4. Results of Search: Provide a narrative description of the results of the literature search(s).

III. OBJECTIVE\HYPOTHESIS: In non-technical terms, state the objective of this protocol, or the hypothesis to be accepted or rejected.

IV. MILITARY RELEVANCE: With regards to military needs and mission requirements, this paragraph should provide a brief and succinct military justification for the research. If applicable state the Science and Technology Objective (STO) that this work supports.

V. MATERIALS AND METHODS:

A. Experimental Design and General Procedures: Provide a "complete description of the proposed use of animals." This section should succinctly outline the formal scientific plan and direction for experimentation. If several experiments or sequential studies

are to be included in the protocol, description of the experimental design for each separate experiment should be contained in sub-parts to this section. The length and detail required in this section depends largely on the complexity of the study. However, **a clearly understandable description of the numbers of animals and their distribution into experimental groups is essential.** The number requested should be the minimum numbers necessary to complete the study, but must be sufficient to yield meaningful results. If too few animals are requested and statistical significance is not achieved, the animals will have been misused. Be certain to include animals necessary for controls or technique development, etc. If the design is complex, a summary table or flow chart showing the distribution of animals by experimental group should be included. **The total number of animals required for the study is listed in section V.B.4. It is critical that reviewers of this protocol are able to follow your reasoning and calculations for the number of animals required, and can verify that the experimental design clearly supports the number of animals requested.**

1. Experiment 1:

2. Experiment 2: (etc.)

B. Laboratory Animals Required and Justification:

1. Non-animal Alternatives Considered: Were alternatives to animal use considered? **No study using animals should be considered prior to the elimination of all reasonable possibilities that the question might be adequately answered using other than animal means,** i.e., computer modeling, cell cultures, etc.

2. Animal Model and Species Justification: It is important that you adequately justify that animals are necessary for attainment of the research/training objectives. Moreover, justify the selection of this particular animal model. Investigators should use the least sentient species that will permit the attainment of research objectives. Why was this particular animal chosen? Were there other animal models considered that are lower on the phylogenetic scale (e.g., mice instead of rabbits)? Is there a unique quality or usefulness about this species that warrants its selection for use?

3. Laboratory Animals: No response necessary to the title paragraph of this section.

a. Genus & Species:

b. Strain/Stock: If inbred or specialized animals are required, please use proper terminology.

c. Source/Vendor: Provide a preferred source for the animals. Procurement of animals from non-USDA licensed sources requires an exception to policy. Enter the source/vendors USDA license number if available.

d. Age:

e. Weight:

f. Sex:

g. Special Considerations: Specialized requirements for the research animals should be reflected here, i.e., SIV or herpes antibody free, Pasteurella free, etc.

h. Other:

4. Total Number of Animals Required:

(a)	mice	320
(b)	guinea pigs	175

All that is required in this section is the total number of animals to be used on the study. The number requested here should match exactly those described in para V. A., Experimental Design & General Procedures in the MATERIALS AND METHODS section. Keep in mind the number requested should be the minimum numbers necessary to complete the study, but must be sufficient to yield meaningful results. If too few animals are requested and statistical significance is not achieved, the animals will have been misused. Be certain to include animals necessary for controls or technique development, etc. If additional animals are needed due to technical or unavoidable circumstances, or to exploit a serendipitous finding, follow IACUC procedures for requesting approval for additional animals.

5. Refinement, Reduction, Replacement: The DoD is often required to provide specific examples of its alternatives initiatives. Does this protocol have any provisions that would qualify it to be identified as one that refines, reduces or replaces (3 R's) the use of animals? For example, does your study use statistical tests that require fewer animals, i.e., a modified LD50 test like Thompson & Weil, or are you using cell cultures, computer modeling or any other technique that will influence the numbers of animals required? Are you using animals lower on the phylogenetic scale? Please provide a short description of the features that you feel qualify the study as one that employs one of the "3 R's," or give a negative reply. No response is needed under the title paragraph of this section.

a. Refinement: The use of analgesia, or the use of remote telemetry to increase the quality and quantity of data

gathered or adjusted early endpoint for the animals are examples of refinements.

b. Reduction: Use of shared control groups, preliminary screening in non-animal systems or innovative statistical packages are examples of reductions.

c. Replacement: Non-animal systems that eliminate the use of animals are examples of replacement.

C. Technical Methods: These should be presented in sufficient detail, documented or referenced, so that the IACUC can adequately review the procedure and obtain a clear understanding of what is to be done, how the animal will be handled, and make a reasonable determination as to whether this proposed use of laboratory animals is in compliance with DoD regulations, guidelines, and federal law. No response is needed under the title paragraph of this section.

1. Pain: The law defines a painful procedure as one that would "reasonably be expected to cause more than slight or momentary pain or distress in a human being to which that procedure was applied, that is, pain in excess of that caused by injections or other minor procedures." **If a procedure involves pain or distress, the P.I. must consult with the attending veterinarian.** Respond N\A if the animals will experience "no pain or distress."

a. USDA (Form 18-3) Pain category:

This information is reported by the organization to the USDA on USDA Form VS 18-23. **The P.I. or primary user should estimate the number of animals that will be counted in each pain category.** There are many situations where there are animals in more than one category, i.e., control animals. If more than one species is requested in the proposal, reflect those animals in a duplicate table in this paragraph. **The total numbers reflected in these three categories should add up to the number and percent of animals requested for the entire protocol in para V.B.4.**

(1) No Pain _____(#)_____% (Column C)

Studies involving no pain or distress beyond that expected on a momentary nature such as would occur with an injection, a deep palpation, grooming activities, etc.

(2) Alleviated Pain _____(#)_____% (Column D)

Procedures wherein anesthesia or analgesia will be administered to avoid or alleviate pain or distress. General anesthesia given for

surgical preparations, or the use of analgesia or anti-inflammatories would be examples for this category.

(3) Unalleviated Pain or Distress

_____(#)_____% (Column E)

Procedures where alleviation of pain or distress are contraindicated for some justifiable reason such as would confound the experimental results if drugs relieving pain were administered. Detailed justification for putting animals into this category is required below in para V.C.1.d.

b. Pain Alleviation: The attending veterinarian should be able to provide assistance in completing this section of the proposal.

(1) Anesthesia/Analgesia/Tranquilization: Describe the methods or strategies planned to alleviate pain or distress. If pain alleviation is planned, specify who will be administering the analgesics, anesthetics, or tranquilizers during the study. Provide agent, dosage, route & site, indication, needle size, etc.

(2) Paralytics: No use of paralytic agents without anesthesia is allowed unless scientifically justified by the P.I. and approved by the IACUC.

c. Alternatives to Painful Procedures:

(1) Source(s) Searched: e.g., AWIC, AGRICOLA, CAAT, MEDLINE, etc.

(2) Date of Search:

(3) Key Words of Search: e.g. Pain, surgery,

(4) Results of Search: Provide a narrative description of the results of the alternatives literature search. "Research facilities will be held responsible, if it is subsequently determined that an alternative to a painful procedure was available to accomplish the objectives of the proposed experiment." The Animal Welfare Act specifically states that the **"P.I. must provide a narrative description of the methods and sources, e.g., the Animal Welfare Information Center, MEDLINE, LIFE SCIENCES ABSTRACTS, AGRICOLA, AND BIOSIS that he\she used to determine that alternatives to the painful procedure were not available."** It is a requirement to perform the alternatives literature search and painful procedure justification even when animals are placed in the alleviated pain category (column D).

d. Painful Procedure Justification: Procedures

causing more than transient or slight pain that are unalleviated, must be justified on a scientific basis in writing by the P.I. The pain must continue for only the necessary period of time dictated by the experiment, and then be alleviated, or the animal humanely euthanized. This paragraph must be completed if there are any animals listed in either the alleviated (column D) or the unalleviated pain or distress (column E) category in para V.C.1. **The P.I. must consult with the attending veterinarian or his or her designee in the planning of both alleviated and unalleviated painful procedures, and state it here.**

2. **Prolonged Restraint:** Describe and justify in detail any prolonged restraint (greater than twelve hours) intended for use during the study, e.g., primate chairs, restraint boards, metabolism cages, etc. Also describe habituation procedures for the prolonged restraint. This section is not intended for short-term actions such as rabbit restraint for bleeding, etc. If there is prolonged restraint involved, who will be restraining the animals, and for how long?

3. **Surgery:** Major operative procedures on non-rodent species, i.e., rabbits, monkeys, etc., should be conducted only in dedicated facilities intended for that purpose, and operated and maintained under aseptic conditions. Non-major operative procedures & all rodent surgery do not require a dedicated facility, but must be performed using aseptic technique, i.e., surgical gloves, mask, sterile instruments. A major operative procedure is one that "penetrates and exposes a body cavity, or causes permanent impairment of physical or physiological function." The animal care unit personnel should assist in defining the requirements of this portion of the law if necessary. No response required under the title paragraph of this section.

a. **Procedure:** Describe in detail any surgical procedures planned.

b. **Pre- and Postoperative Provisions:** Detail the provisions for both pre- and postoperative care, including provisions for post-surgical observations. Also include the provider of that care, and the location for the postoperative care.

c. **Location:** Give the location\room # for the proposed surgical procedure.

d. **Multiple Survival Surgery Procedures:** If multiple major operative procedures on the same animal are intended, they must be adequately justified for scientific reasons by the P.I. in writing.

(1) **Procedures:**

(2) **Scientific Justification:**

4. Animal Manipulations: Any injections, sampling procedures, or other manipulations of the animals necessary for the execution of the study must be described if not listed in section V. List needle sizes, routes of injection or withdrawal and anatomical location, e.g. 21 ga needle, SQ, IM, femoral vein, jugular vein etc., or the proposed method so that a reasonable evaluation of the appropriateness of the procedure can be made. You may furnish the committee a reference or SOP to document a particular procedure in lieu of a detailed description. You may wish to rearrange the subparagraphs of this section to suit your protocol. No response is needed under the title paragraph of this section.

a. Injections: There is no need to duplicate specific information already provided in section V.C.1.b., the Pain Alleviation, anesthesia/analgesia section of the proposal.

b. Biosamples: Cerebral taps, blood sampling, etc. List amounts taken and method for sampling. Procedures performed or biosamples obtained during a necropsy need not be described here.

c. Animal Identification: Microchip, tattoo, ear tags, cage cards, etc.

d. Behavioral Studies: Fully describe any intent to use aversive stimuli, food or water deprivation, etc, that would impact upon the animals in this study.

e. Other procedures: EKG's, radiology, aerosol exposure, etc.

5. Adjuvants: List any adjuvants and your plan for their use. Provide dosages & route.

6. Study Endpoint: What is the projected end point or termination of the study for the animals? Is death, euthanasia, or recovery expected; and what is the specific plan for determining when the animal experimentation phase will be stopped? You should ensure that unnecessary pain or distress is prevented by carefully considering "When is the experimental question answered?" so that the animals can be removed from the study as soon as feasible. Explain the plan for the disposition of surviving animals. **You must specifically address and justify any proposed use of death as an endpoint.**

7. Euthanasia: Explain the plan for euthanasia of the animals at the completion of the study and who will perform the procedure. The AWA defines euthanasia as "humane destruction of an animal by a method that produces rapid unconsciousness and subsequent

death without evidence of pain or distress, or a method that utilizes anesthesia produced by an agent that causes painless loss of consciousness and subsequent death." The current AVMA guidelines for euthanasia must be followed. Exceptions to the AVMA guidelines will be considered by the IACUC on a case-by-case basis. Exceptions must be scientifically justified by the P.I. in writing. The attending veterinarian will assist in selecting the best method for euthanasia if requested.

D. Veterinary Care: Attending veterinary care of lab animals receives particular emphasis in the AWA. The attending veterinarian of your facility will assist P.I.s with preparing this section if requested. No response is necessary to the title paragraph of this subsection.

1. Husbandry Considerations: The law specifically states that animal housing and living conditions must be appropriate to their species, and contribute to their health and comfort. Describe husbandry or refer to SOP. If known, list the location the animals will be routinely housed and the length of housing requirement. Personnel in the animal care unit should be able assist P.I.s in the preparation of the protocol sections dealing with animal care issues.

a. Study Room: If stay exceeds 12 hours.

b. Special Husbandry Provisions: Micro-isolators, metabolic cages, etc.

2. Attending Veterinary Care: Will the animals be observed daily or more frequently, and by whom? What is the plan if the animal becomes ill or debilitated during the study and requires supportive therapy? Will the animal be euthanized if it becomes critically ill or comatose, and by whom (study endpoint adjustment)? Justification for not providing supportive care for clinically ill animals is necessary.

3. Enrichment Strategy: Written justification for restricting enrichment programs or activity programs of dogs, cats, or nonhuman primates must be provided.

a. Dogs: Do you have any reason to restrict activity programs for dogs on this protocol that might be implemented by the animal care unit to comply with federal welfare regulations. If yes, justify.

b. Nonhuman Primates: Do you have any reason to prohibit environmental enrichment or enhancement strategies that might be implemented by the animal care unit to comply with federal welfare regulations. If yes, justify.

E. Data Analysis: List the statistical test(s) planned or the strategy intended to evaluate the data.

F. Investigator & Technician Qualifications/Training: List those animal procedures or manipulations described in the protocol that will be performed by each investigator or technician, and their training or qualifications to perform these procedures. Personnel conducting the "hands-on" animal procedures described in the protocol must be identified and appropriately trained and qualified to perform that procedure. **This is NOT questioning the P.I.'s PROFESSIONAL qualifications to conduct the research, but rather a requirement that personnel actually performing the research animal manipulations are technically competent, and thus are not inflicting unnecessary pain, distress, or injury to an experimental animal due to inexperience or improper technique.** Contact your attending veterinarian for assistance with this requirement.

VI. Biohazard/Safety: Provide a list of any potential biohazards associated with this proposal, e.g., viral agents, toxins, radioisotopes, oncogenic viruses, chemical carcinogens, etc. Explain any safety precautions or programs designed to protect personnel from biohazards, and any surveillance procedures in place to monitor potential exposures.

(Start new page here)

VII. ASSURANCES: The law specifically requires several written assurances from the P.I. It states that "research facilities will be held responsible if it is subsequently determined that an experiment is unnecessarily duplicative, and that a good faith review of available sources would have indicated as much."

(This section will state) As the Primary Investigator on this protocol I acknowledge my responsibilities and provide assurances for the following:

A. Animal Use: The animals authorized for use in this protocol will be used only in the activities and in the manner described herein, unless a deviation is specifically approved by the IACUC.

B. Duplication of Effort: I have made a reasonable, good faith effort to ensure that this protocol is not an unnecessary duplication of previous experiments.

C. Statistical Assurance: I assure that I have consulted with an individual who is qualified to evaluate the statistical design or strategy of this proposal, and that the "minimum number of animals needed for scientific validity are used."

D. Biohazard\Safety: I have taken into consideration, and I have made the proper coordinations regarding all applicable rules and regulations regarding radiation protection, biosafety, recombinant issues, etc., in the preparation of this protocol.

E. Training: I verify that the personnel performing the

animal procedures/manipulations described in this protocol are technically competent and have been properly trained to ensure that no unnecessary pain or distress will be caused as a result of the procedures/manipulations.

F. Responsibility: I acknowledge the inherent moral and administrative obligations associated with the performance of this animal use protocol, and I assure that all individuals associated with this project will demonstrate a concern for the health, comfort, welfare, and well-being of the research animals. Additionally, I pledge to conduct this study in the spirit of the fourth "R" which the DoD has embraced, namely, "Responsibility" for implementing animal use alternatives where feasible, and conducting humane and lawful research.

(Signature Required) _____

(Primary Investigator)

G. Painful Procedures: (Include only if conducting research that will cause more than slight or momentary pain or distress (Column D or E by USDA classification) the following statement must follow.) **I am conducting biomedical experiments which may potentially cause more than momentary or slight pain or distress to animals that WILL BE relieved or WILL NOT (circle one) be relieved with the use of anesthetics, analgesics and/or tranquilizers.** I have considered alternatives to such procedures; however, using the methods and sources described in the protocol, I have determined that alternative procedures are not available to accomplish the objectives of the proposed experiment.

(Signature Required) _____

(Primary Investigator)

VIII. Enclosures: (Available for the attachment of the results of any literature searches, SOPs, references, or other documents pertinent to the protocol that you may wish to include. Local IACUC's should determine specific items to be included here.)

A. Literature Searches: DTIC, FEDRIP, MEDLINE, AGRICOLA, etc.

B. Pathology Addendum: Optional information

C. Pain Scoring Guidelines:

D. Adjuvant Policy:

PROTOCOL COVER SHEET

PROTOCOL TITLE:

PRINCIPAL INVESTIGATOR:
(Signature Required) _____
(Principal Investigator)

SCIENTIFIC REVIEW:

(Signature Required) _____
(Research Unit Chief/Directors signature)

ATTENDING/CONSULTING VETERINARIAN:

(Signature Required) _____
(Attending/Consulting Veterinarian)

STATISTICAL REVIEW: A person knowledgeable in statistics has reviewed the experimental design. (No response is required to the title paragraph of this section) (Inclusion of Signature Block is Recommended, but Optional)

_____
(Statistician)

***OTHERS:** You may wish to add specific additional offices or signature blocks for individuals responsible for coordination or compliance issues pertinent to your facility or operation. (i.e. Co-investigators, Coordinating Departments, IACUC Chair, Biosafety Review etc.)

PROTOCOL TITLE:

PRINCIPAL INVESTIGATOR:

CO-INVESTIGATOR(S):

I. NON-TECHNICAL SYNOPSIS:
II. BACKGROUND:
    A. Background:
    B. Literature Search:
        1. Literature Source(s) Searched:
        2. Date and Number of Search:
        3. Key Words of Search:
        4. Results of Search:
III. OBJECTIVE\HYPOTHESIS:
IV. MILITARY RELEVANCE:
V. MATERIALS AND METHODS:
    A. Experimental Design and General Procedures:
    B. Laboratory Animals Required and Justification:
        1. Non-animal Alternatives Considered:
        2. Animal Model and Species Justification:
        3. Laboratory Animals:
            a. Genus & Species:
            b. Strain/Stock:
            c. Source/Vendor:
            d. Age:
            e. Weight:
            f. Sex:
            g. Special Considerations:
            h. Other:
        4. Total Number of Animals Required:
        5. Refinement, Reduction, Replacement:
            a. Refinement:
            b. Reduction:
            c. Replacement:
    C. Technical Methods:
        1. Pain:
            a. USDA (Form 18-3) Pain category:
                (1) No Pain _____(#)_____% (Column C)
                (2) Alleviated Pain _____(#)_____% (Column D)
                (3) Unalleviated Pain or Distress
                _____(#)_____% (Column E)
            b. Pain Alleviation:
                (1) Anesthesia/Analgesia/Tranquilization:
                (2) Paralytics:
            c. Alternatives to Painful Procedures:
                (1) Source(s) Searched:
                (2) Date of Search:
                (3) Key Words of Search:
                (4) Results of Search:
            d. Painful Procedure Justification:

2. Prolonged Restraint:
3. Surgery:
    a. Procedure:
    b. Pre- and Postoperative Provisions:
    c. Location:
    d. Multiple Survival Surgery Procedures:
        (1) Procedures:
        (2) Scientific Justification:
4. Animal Manipulations:
    a. Injections:
    b. Biosamples:
    c. Animal Identification:
    d. Behavioral Studies:
    e. Other procedures:
5. Adjuvants:
6. Study Endpoint:
7. Euthanasia:

D. Veterinary Care:
1. Husbandry Considerations:
    a. Study Room:
    b. Special Husbandry Provisions:
2. Attending Veterinary Care:
3. Enrichment Strategy:
    a. Dogs:
    b. Nonhuman Primates:

E. Data Analysis:

F. Investigator & Technician Qualifications/Training:

VI. Biohazard/Safety:

(Start new page here)

VII. ASSURANCES: As the Primary Investigator on this protocol I provide the following assurances:

A. Animal Use: The animals authorized for use in this protocol will be used only in the activities and in the manner described herein, unless a deviation is specifically approved by the IACUC.

B. Duplication of Effort: I have made a reasonable, good faith effort to ensure that this protocol is not an unnecessary duplication of previous experiments.

C. Statistical Assurance: I assure that I have consulted with an individual who is qualified to evaluate the statistical design or strategy of this proposal, and that the "minimum number of animals needed for scientific validity are used."

D. Biohazard\Safety: I have taken into consideration, and I have made the proper coordinations regarding all applicable rules and regulations regarding radiation protection, biosafety, recombinant issues, etc., in the preparation of this protocol.

E. Training: I verify that the personnel performing the animal procedures/manipulations described in this protocol are technically competent and have been properly trained to ensure that no unnecessary pain or distress will be caused as a result of the procedures/manipulations.

F. Responsibility: I acknowledge the inherent moral and administrative obligations associated with the performance of this animal use protocol, and I assure that all individuals associated with this project will demonstrate a concern for the health, comfort, welfare, and well-being of the research animals. Additionally, I pledge to conduct this study in the spirit of the fourth "R" which the DoD has embraced, namely, "Responsibility" for implementing animal use alternatives where feasible, and conducting humane and lawful research.

(Signature Required) _____

(Primary Investigator)

G. Painful Procedures: (Include above if conducting research that will cause more than slight or momentary pain or distress (Column D or E by USDA classification) the following statement must follow.) **I am conducting biomedical experiments which may potentially cause more than momentary or slight pain or distress to animals that WILL BE relieved or WILL NOT (circle one) be relieved with the use of anesthetics, analgesics and/or tranquilizers.** I have considered alternatives to such procedures; however, using the methods and sources described in the protocol, I have determined that alternative procedures are not available to accomplish the objectives of the proposed experiment.

(Signature Required) _____

(Primary Investigator)

VIII. Enclosures: (Available for the attachment of the results of any literature searches, SOPs, references, or other documents pertinent to the protocol that you may wish to include. Local IACUC's should determine specific items to be included here.)

A. Literature Searches: FEDRIP, DTIC, MEDLINE, AGRICOLA, etc.

B. Pathology Addendum: Optional information

C. Pain Scoring Guidelines:

D. Adjuvant Policy:

Appendix D

DoD Semiannual Program Review and Facility Inspection Checklist

DOD SEMIANNUAL PROGRAM REVIEW/FACILITY INSPECTION CHECKLIST-MANDATORY

Completion of this one-page checklist by the IACUC during the semi-annual program review and facility inspection is mandatory.

ORGANIZATION:_____DATE OF REVIEW:_____

EVALUATION VIA CATEGORY	S	M	U	NA	EVALUATION VIA CATEGORY	S	M	U	NA
AAALAC History					Identification Records				
Administrative Commitment					Emergency, Weekend & Holiday Care				
Administrative Organization					Adequate Veterinary Care				
Institutional Policies					Preventive Medicine				
Animal Care & Use Committee					Animal Procurement				
Protocol Review Procedures					Quarantine Isolation				
Personnel Qualifications					Control of Animal Disease				
Personnel Hygiene					Diagnostic Resource				
Occupational Health Program					Anesthesia & Analgesia				
Animal Restraint					Surgery & Postsurgical Care				
Multiple Major Surgeries					Euthanasia				
Animal Husbandry					Physical Plan Arrangement/Cond.				
Housing/Caging & Pens					Support Areas				
Social Enrichment					Cage Sanitation Fac.				
Activity/Exercise					Storage Facilities				
Food/Water/Bedding					Surgery Facilities				
Sanitation					Animal Rooms				
Waste Disposal Methods					HVAC				
Vermin Control					Emergency Power				
Farm Facilities					Animal Use Laboratories				

KEY: S = Satisfactory; M = Minor Deficiency; U = Unsatisfactory/Major deficiency; NA = Not Applicable

USE OF CHECKLIST IN PROGRAM EVALUATION– Completion of this one page checklist is mandatory. Any area that has minor or Major/Unsatisfactory deficiencies should be further explained on a separate page(s). Moreover, the listing of the minor or major deficiency should also include a plan of action for correction of the deficiency.

DETAILED OUTLINE OF CHECKLIST– Utilization of this outline is optional. Attached is a detailed outline which follows this checklist. The outline includes most additional DoD requirements and is very similar to the program description outline used by organizations applying for AAALAC accreditation. This outline or one devised by your IACUC can be used to augment your semiannual program reviews.

USE OF ROOM INSPECTION FORM– Utilization of attached form is optional. The use of this form or one developed by your organization may be useful in augmenting your semi-annual program review.

MINORITY OPINIONS– Utilization of attached form is optional. All minority opinions must be included in the IACUC report. In addition it is mandatory that a majority of IACUC members sign the semi-annual report.

There **were / were not** (circle one) minority opinions in this semi-annual review.

-OPTIONAL-

DETAILED OUTLINE OF CHECKLIST-- Utilization of this outline is optional. Attached is a detailed outline which follows this checklist. The outline includes most additional DoD requirements and is very similar to the program description outline used by organizations applying for AAALAC accreditation. This outline or one devised by your IACUC can be used to augment your semiannual program reviews.

A. General Comments AAALAC history, administrative commitment, administrative organization,

B. Institutional Policies

1. **Monitoring the Care and Use of Animals**
    a. Institutional Animal Care and Use Committee
        1) Composition- New DoD Directive states the minimum number for IACUC membership is 5. New DoD policy states requires those IACUCS with only one non-affiliated member the IACUC to also appoint an additional alternate non-affiliated member. New DoD policy states specific training requirements for non-affiliated IACUC members (8 hours).
        2) Protocol review procedures- New DoD Directive and policies require use of DoD standard protocol format. New requirements include documentation of literature searches for DTIC, FEDRIP and other searches as required.
        3) Review of programs for Care and Use of Animals- New DoD policy encourages Commanders/Directors/CEO's of DoD laboratories to invest in training at all levels for those that use animals.
    b. USDA Report
2. **Veterinary Care**
    a. Intensity -
    b. Responsibilities of the Veterinarian(s) -
    c. Involvement in monitoring the care of animals -
    d. Involvement in monitoring use of animals -
3. **Personnel Qualifications**
    a. Animal resource Professional/Management/ Supervisory Personnel -
    b. Animal Care Personnel -
    c. Research Staff -
    d. Use of Hazardous Agents -
4. **Personnel Hygiene**
    a. Work clothing provided -
    b. Laundering of work clothing -
    c. Shower and change facilities -
    d. Eating, drinking, and smoking policies -
    e. Eating, drinking, and smoking facilities -
5. **Occupational Health and Safety Program**
    a. Content of program -
    b. Program oversight -
    c. Participation by staff -
    d. Training on zoonosis and personal hygiene -
6. **Experimentation involving Hazardous Agents**
7. **Animal Restraint -**
8. **Multiple Major Surgical Procedures -**

C. Laboratory Animal Husbandry

1. **Housing**
    a. Caging and pens -

b. Social enrichment -
c. Activity/exercise -
d. Micro- & Macroenvironments -

2. Food
   a. Type -
   b. Vendor quality control -
   c. Storage -
   d. Type of feeders -
   e. Institutional quality control -
3. Bedding
   a. Type -
   b. Appropriateness for how used -
   c. Storage facilities -
   d. Quality control -
4. Water
   a. Source - Satisfactory.
   b. Treatment - Satisfactory.
   c. Quality control procedures -
5. Sanitation
   a. Cage & pan litter changing -
   b. Portable cage sanitation
      1) Frequency -
      2) Procedures and agents -
      3) Monitoring and effectiveness -
   c. Pens, Stalls, etc. -
   d. Sanitation of feeding implements -
   e. Watering Implements
      1) Water Bottles -
      2) Automatic watering system -
   f. Sanitation of transport cages and vehicles -
   g. Room sanitation -
   h. Waste disposal methods -
   i. Vermin control -
6. Animal Identification
   a. Methods for identification of each species -
   b. Information of cage cards -
   c. Individual animal records -
7. Provisions for Emergency, Weekend and Holiday Care
   a. Qualifications of individuals providing care -
   b. Procedures performed -
   c. Monitoring of environmental systems -

D. Veterinary Care
   1. Preventive Medicine
      a. Animal procurement -
      b. Quarantine, Stabilization and Isolation -
         1) Receiving and initial evaluation procedures -
         2) Quarantine facilities
            a) For random source animals -
            b) For purpose bred animals -

3) Quarantine procedures -

c. Separation by species, source and health status -

2. Surveillance, Diagnosis, Treatment, and Control of Animal Disease

a. Program

1) Daily observation of animals -
2) Procedures for providing veterinary care -
3) Medical Records maintenance procedures -
4) Preventive medicine program for each species -
5) Animal Health monitoring -

b. Diagnostic Resources

1) Clinical Laboratory -
2) Necropsy/histology -
3) Radiology -
4) Use of available diagnostic resources including commercial laboratories -

3. Anesthesia and Analgesia

a. Agents used for each species -
b. Guidelines provided by the Veterinarian -
c. Monitoring the use of A & A -
d. Training and experience of personnel who perform anesthesia -
e. Safety procedures for use of explosive/flammable agents -
f. Waste anesthetic gas scavenging -

4. Survival Surgery and Postsurgical Care

a. Non-rodent mammalian species

1) Professional supervision -
2) Qualifications of persons performing the surgery -
3) Qualifications of surgical technicians -
4) Aseptic Techniques -
5) Postoperative care -
6) Maintenance of PO care records -

b. Rodent species - use of cap, mask, surgical scrub, sterilized instruments used, hair clipped, .
c. Non-survival surgeries -

E. Physical Plant

1. Overview of General Arrangement and Condition of Facility
2. Support Areas

a. Clean cage storage -
b. Storage Areas -
c. Waste disposal facilities -
d. Lounge area for animal care personnel -
e. Administrative space -
f. Cage sanitation facilities -

1) Interior surfaces -
2) Sanitation equipment -
3) Environmental conditions for personnel -

g. Surgery facilities

1) Areas for

a) Surgery -
b) Animal preparation -
c) Dressing rooms -
d) Surgeon preparation -

e) Postoperative care -

3. Animal Rooms
   a. Interior surfaces -
   b. Lighting - Satisfactory.
   c. HVAC -
4. Other Features
   a. Emergency power -
   b. Environmental monitoring
      1) Animal rooms air flow -
      2) Relative air pressures -
      3) Temperature -
      4) Humidity -
   c. Security -
5. Miscellaneous Animal Care and Use Equipment

F. Special Considerations
   1. Genetics and Nomenclature -
   2. Facilities and Procedures for Animal Research Involving Hazardous Agents -
   3. Farm Animals -

G. Study Areas Visited -

H. Laboratories Visited -

DoD Semiannual Program Review/Facility Inspection

-OPTIONAL-
USE OF ROOM INSPECTION FORM--Utilization of attached form is optional. The use of this form or one developed by your organization may be useful in augmenting your semi-annual program review.

Building _____

==========

ROOM_____ Animal Holding Area Lab Other

==========

ROOM_____ Animal Holding Area Lab Other

==========

ROOM_____ Animal Holding Area Lab Other

==========

ROOM_____ Animal Holding Area Lab Other

==========

GENERAL COMMENTS:

-OPTIONAL-
MINORITY OPINIONS-- **Utilization of attached form is optional.** All minority opinions must be included in the IACUC report. In addition, it is mandatory that a majority of IACUC members sign the semi-annual report. This form or one developed by your organization must be used to document that there were/were not minority opinions and that a majority of the IACUC members reviewed and signed the semiannual program review and facility inspection.

There **were** / **were not** (circle one) minority opinions in this semi-annual review.

SEMIANNUAL IACUC INSPECTION/PROGRAM REVIEW SIGNATURE SHEET

The Animal Welfare Act requires IACUCs to review and inspect laboratory animal care and use programs on a semiannual basis. This form facilitates compliance with the requirement that at least a majority of members of the IACUC sign the semiannual report, and have a opportunity to express a minority opinion to the report. Minority opinions should be appended to the report in writing.

IACUC MEMBER	SIGNATURE	DATE	MINORITY OPINION YES	MINORITY OPINION NO

Appendix E

DoD Inspector General Recommendations on the Use of Animals in DoD Medical Research Facilities and Contract Research Facilities

Appendix E

DoD Inspector General Recommendations on the Use of Animals in DoD Medical Research Facilities and Contract Research Facilities

MEDICAL RESEARCH FACILITIES

Recommendation 1: The Director of Defense for Research and Engineering, in coordination with the Assistant Secretary of Defense (Health Affairs), should issue Department of Defense policy that requires every Department of Defense research facility to:

1. Support, and as necessary develop, animal care and use training programs, and encourage certification for all personnel involved in the care, use, and treatment of the animals; and

2. Develop a formal checklist to be used by the Institutional Animal Care and Use Committee when conducting its semiannual inspection. The published reports should document use of the checklist. All members of the Institutional Animal Care and Use Committee should sign the report that also includes a statement indicating there are or are not minority opinions.

Recommendation 2: The Director of Defense for Research and Engineering, in coordination with the Assistant Secretary of Defense (Health Affairs) and the General Counsel, Department of Defense, should provide clear Department of Defense guidance concerning the requirements and qualifications of the non-affiliated member of the Institutional Animal Care and Use Committee. The guidance should establish eligibility requirements, professional qualification, and characteristics for committee members, and set the minimum number of non-affiliated members desired.

Recommendation 3: The Director of Defense for Research and Engineering, in coordination with the Assistant Secretary of Defense (Health Affairs), should direct the Armed Services Biomedical Research Evaluation and Management Committee to develop a standardized, comprehensive Department of Defense research protocol request form and require its use by all Department of Defense research facilities.

Recommendation 4: The Director of Defense for Research and Engineering, in coordination with the Assistant Secretary of Defense (Health Affairs), should ensure each research facility commander is provided with information concerning the commendable practices identified by the inspection teams for consideration in their animal care and use program.

CONTRACT RESEARCH FACILITIES

Recommendation 1: The Director of Defense Research and Engineering, in coordination with the Assistant Secretary of Defense (Health Affairs), should issue Department of Defense policy that requires the Military Departments and the research facilities operated by the Office of the Secretary of Defense to complete the following tasks before awarding any contract or grant that involves research using any live animals:

1. All extramural research proposals using live animals should be reviewed by a veterinarian trained and knowledgeable about laboratory animal medicine to ensure compliance with all Federal laws, and Department of Defense regulations and guidelines concerning the care and use of animals.

2. To ensure the facility is complying with the requirements in the Animal Welfare Regulation, the Department of Defense funding agency should contact the United States Department of Agriculture to obtain copies of the most recent inspection reports for a facility under consideration for a contract or grant.

Recommendation 2: The Director of Defense Research and Engineering, in coordination with the Assistant Secretary of Defense (Health Affairs), should issue Department of Defense policy that requires the Military Departments and research facilities operated by the Office of the Secretary of Defense to perform the following tasks after a contract or grant that involves live animal use is awarded:

1. A veterinarian knowledgeable about laboratory animal medicine should conduct site visits to evaluate the animal care and use program at contract research facilities using non-human primates, marine mammals, dogs, or cats; conducting research deemed sensitive; or cited by the United States Department of Agriculture as a research facility under investigation. The policy should include the requirements for the initial site visit and the conditions for follow-on site visits.

2. To ensure continued compliance with the Animal Welfare Regulation, the Department of Defense funding agency should contact the United States Department of Agriculture on a routine basis to obtain a copy of the most recent annual inspection report for each facility with an active contract.

Recommendation 3: The Director of Defense Research and Engineering, in coordination with the Assistant Secretary of Defense (Health Affairs), should direct the Military Departments and the research facilities operated by the Office of the Secretary of Defense to require that all contractor proposals for research using live animals include all the information contained in the standardized Department of Defense protocol request format.

Appendix F

Nonaffiliated IACUC Members Professions

Appendix F

Nonaffiliated IACUC Members Professions

Accountant
Administrative Assistant
Attorney
Biologist
Chaplain
Chemist
Clinical Health Worker
Communications Expert
Dentist
Engineer
Health Educator
Health Services Adminstrator
Homemaker
Information Systems Specialist
Lab Scientist
Law Enforcement
Manpower Management Analyst
Medical Records Librarian
Microbiologist
Nurse
Personnel Consultant
Physician
Public Affairs Officer
Teacher
Veterinarian
Veterinary Technologist/Animal Services

Appendix G

Dissemination of Information on Animal Care and Use

Appendix G

Dissemination of Information on Animal Care and Use

- Posters throughout the facility advising employees and the public on procedures for filing animal care and use complaints emphasize that individuals do not have to use the chain of command but can go directly to the Institutional Animal Care and Use Committee (IACUC) chairman or the Inspector General (IG).
- Annual briefings to all facility personnel on the IG complaint process
- Notices posted on bulletin boards throughout the facility on how to register a complaint
- Mandatory investigator training courses
- Mandatory monthly seminars
- Researchers and technicians required to have documented appropriate training before performing procedures on animals
- Research staff and graduate students required to attend a training course on the humane and ethical use of animals prior to engaging in research activities
- Provide each investigator with operating instructions and manuals
- Posters announcing availability of anonymous "hot line" for registering concerns/complaints
- Video tapes
- Investigators' handbooks
- Directed discussions at IACUC meetings
- Newsletters such as Scientists Center for Animal Welfare

Appendix H

IACUC Training and Information

Appendix H

IACUC Training and Information

Non-affiliated IACUC Member Training Recommendations

The following are some example topics and resources which would fulfill the Congressionally mandated 8 hour training requirement for any new non-affiliated IACUC members. This is just one example of a program which would fulfill this training.

Topics:	Resources:
1. Humane Care and Ethics Issues Dealing With Animal Use (This block should be NLT 4 hours long)	- Video (40 Min) "IACUC Functions and the Humane Care and Use of Animals" available from the Laboratory Animal Training Association (LATA) - Questions and answers with the attending veterinarian - USAMRIID Slide Set (~200 slides covering Surgery, Euthanasia, Ethics, Pain and Distress) - Education and Training in the Care and Use of Laboratory Animals (Nat. Acad. Press, 1991)
2. Regulatory Responsibilities and Protocol Review Techniques (This block should be NLT 4 hours long)	- Overview of DoD protocol format with the attending veterinarian - Lab Animal protocol review articles (available from the editor as a bound notebook with 2 yrs of reviews) - USAMRIID Slide set covering responsibilities, laws and regulations (~100 slides)
3. Facility Familiarization Tour	- attending veterinarian, facility manager, IACUC members
4. Basic Husbandry and Techniques of Laboratory Animals	- LATA video tapes and script - ACLAM slide sets with audio cassettes - USAMRIID slide set
5. Documentation of Training	- Each institute will develop a checklist and sign in logo to verify training received.

Additionally, we recommend individual institute supplement in house training programs by sending IACUC members to outside meetings such as PRIM&R/ARENA and AALAS.

Examples of Training and Information Provided to IACUC Members

- OPRR Institutional Animal Care and Use Guidebook
- NIH Publication 85-23, Guide for the Care and Use of Laboratory Animals
- PHS Policy on Humane Care and Use of Laboratory Animals
- Animal Welfare Act
- Local manuals on care and use of research animals
- The Journal "Lab Animal"
- Newsletter from the National Association for Biomedical Research
- Video tapes
- AAALAC program description
- One-on-one briefings
- Quarterly ethics workshop
- Ethics in research training courses
- Copy of DoD regulation on use of animals in research
- Funded attendance at workshops by Scientists Center for Animal Welfare
- Funded attendance at the Public Responsibility in Medicine and Research conference "Animal Research Committees: Ethics, Education and Economics"
- Provided course "Animals in Medical Research - Guidelines" 3.5 hour course at National Naval Medical Center
- Provided continuing education training material to each member monthly
- Journal articles and newsletters provided to members and discussed at the committee
- Provided membership in the American Association of Laboratory Animal Science
- ILAR Publication - Education and Training in the Care and Use of Laboratory Animals, NRC and ILAR

Appendix I

Journals with DoD Animal Research Publications

Appendix I

Journals with DoD Animal Research Publications

Accident, Analysis, & Prevention
Acta Tropica
American Journal of Cardiovascular Pathology
American Journal of Dermatopathology
American Journal of Otology
American Journal of Respiratory Critical Care Medicine
American Journal of Tropical Medicine Hygiene
American Journal of Veterinary Research
American Journal of Physiology
Analytical Letters
Archives of Oral Biology
Archives of Toxicology
Aviation, Space, and Environmental Medicine
Behavioral and Neural Biology
Biochemistry
Biotechnology
Blood
Brain Research
Brain Research Bulletin
Burns
Chemical Biological Interactions
Chemical Research in Toxicology
Chest
Chirality
Circulation
Clinical Immunotherapy
Clinical Pharmacology & Therapeutics
Clinical Research
Contemporary Topics in Laboratory Animal Science
Diabetes
Drug and Chemical Toxicology
Drug Development Research
Endocrinology
Environmental Toxicology and Chemistry
Epilepsy Research
European Journal of Immunology
Experimental Cell Research
Experimental Hematology
Experimental Parasitology
FASEB Journal
Federal Practitioner
Fundamental Applied Toxicology
Gastroenterology
Hemoglobin
Human and Experimental Toxicology
Immunity

Infection and Immunity
Inflammation
Inhalation Toxicology
International Journal of Immunopharmacology
International Journal of Radiation Biology
International Journal of Sports Medicine
Investigative Ophthalmology and Visual Science
Journal of Acoustical Society of America
Journal of American Academy of Dermatology
Journal of American College of Surgeons
Journal of American Colleges of Cardiology
Journal of American Medical Association (JAMA)
Journal of Analytical Toxicology
Journal of Applied Toxicology
Journal of Burn Care and Rehabilitation
Journal of Chromatography
Journal of Clinical Microbiology
Journal of Clinical Periodontology
Journal of Cutaneous Pathology
Journal of Dental Research
Journal of Diarrheal Research
Journal of Experimental Medicine
Journal of Immunology
Journal of Infectious Disease
Journal of Investigative Surgery
Journal of Medical Entomology
Journal of Neuroscience Methods
Journal of Nutrition
Journal of Pharmacological and Toxicological Methods
Journal of Pharmacology and Experimental Therapeutics
Journal of Pharmacy and Pharmacology
Journal of Physiology
Journal of Submicroscopic Cytology and Pathology
Journal of the American Mosquito Control Association
Journal of the American Veterinary Medicine Association
Journal of the Experimental Analysis of Behavior
Journal of Trauma
Laboratory Animals
Laboratory Animal Science
Lymphokine and Cytokine Research
Management of Wilderness and Environmental Emergencies
Medical Veterinary Entomology
Microbiology
Molecular and Biochemical Parasitology
Molecular Microbiology
Neuropharmacology
NeuroToxicology
Oral Microbiology and Immunology
Parasite Immunology
Parasitology Research
Pediatric Pulmonology
Pediatric Research
Pharmacology

Pharmacology, Biochemistry and Behavior
Physiology and Behavior
Proceedings of the Society of Experimental Biology and Medicine
Proceedings of the National Academy of Science
Radiation Research
Shock
Southern Medical Journal
Thrombosis Haemostasis
Tissue and Cell
Toxicologist
Toxicology
Toxicology and Applied Pharmacology
Toxicology Methods
Toxicon
Tropical Geographical Medicine
Undersea & Hyperbaric Medicine
Vaccine
Veterinary Pathology

Appendix J

Status of AAALAC Accreditation of DoD Facilities

Appendix J

Status of AAALAC Accreditation of DoD Animal Care and Use Facilities

I U.S. DoD Programs Accredited by AAALAC:

I.1 OSD Components:

- Armed Forces Institute of Pathology, Washington, D.C.
- Armed Forces Radiobiology Research Institute, Bethesda, MD
- Uniformed Services University of the Health Sciences, Bethesda, MD

I.2 U.S. Army:

- U.S. Army Research Institute of Environmental Medicine, Natick, MA
- U.S. Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground
- U.S. Army Medical Research Institute of Infectious Diseases, Fort Detrick, MD
- U.S. Army Aeromedical Research Laboratory, Fort Rucker, AL
- U.S. Army Biomedical Research and Development Laboratory, Fort Detrick, MD
- U.S. Army Edgewood Research, Development and Engineering Center, Aberdeen Proving Ground, MD
- William Beaumont Army Medical Center, Department of Clinical Investigation, Biological Research Service, El Paso, TX
- Tripler Army Medical Center, Tripler, Army Medical Command, Honolulu, HI
- Fitzsimons Army Medical Center, Aurora, CO
- Laboratory Animal and Surgery Service, Department of Clinical Investigations, Madigan Army Medical Center, Tacoma, WA
- U. S. Army Center for Health Promotion and Preventive Medicine, Aberdeen Proving Ground, MD
- U.S. Army 1st Special Warfare Training Group, Fort Bragg, Fayetteville, NC
- Walter Reed Army Institute of Research, Washington, D.C.
- Department of Clinical Investigation, Brooke Army Medical Center, Ft. Sam Houston, TX
- U.S. Army AMEDD Center and School, Ft. Sam Houston, TX
- Walter Reed Army Medical Center, Washington, D.C.

- Dwight David Eisenhower Medical Center, Fort Gordon, GA

I.3 U.S. Navy:

- Naval Dental Research Institute, Naval Training Center, Great Lakes, IL
- Naval Medical Center, Clinical Investigation Program, San Diego, CA
- Naval Medical Center, Clinical Investigation and Research, Portsmouth, VA
- Naval Medical Research Institute, Bethesda, MD
- Naval Command, Control and Ocean Surveillance Center, San Diego, CA

I.4 U.S. Air Force:

- Armstrong Laboratory - Wright-Patterson, Wright-Patterson AFB, OH
- Armstrong Laboratory - Brooks, Brooks Air Force Base, TX
- Clinical Research Laboratory, 81st Medical Group, Keesler AFB, MS
- Clinical Investigation Directorate, Wilford Hall Medical Center, Lackland AFB, TX
- Clinical Investigation Facility, 60th Air Mobility Command, Travis AFB, CA

II U.S. DoD Programs Actively Involved in the AAALAC Process:

II.1 U.S. Army:

- U.S. Army Institute of Surgical Research, Fort Sam Houston, TX, has applied for AAALAC accreditation
- U.S. Army Dugway Proving Ground, UT has applied for AAALAC accreditation

II.2 U.S. Air Force Programs:

- U.S. Air Force Academy has applied for AAALAC accreditation

III Overseas Programs Accredited by AAALAC:

- Naval Medical Research Institute Detachment, Lima, Peru
- Naval Medical Research Unit #2, Jakarta, Indonesia
- Naval Medical Research Unit #3, Cairo, Egypt

IV Overseas DoD Program Actively Involved in the AAALAC Process:

- Armed Forces Research Institute of Medical Sciences (AFRIMS), Bangkok, Thailand, has applied for AAALAC accreditation

Appendix K

Animal Use Categories

Appendix K

Animal Use Categories

MEDICAL (M)

M1: Military Dentistry

Includes studies in the areas of:

- dental disease and management of dental emergencies
- testing medical devices for maxillofacial injury
- testing materials for maxillofacial injury
- surgical management of maxillofacial injury

M2: Infectious Diseases

Includes studies in the areas of:

- emerging infectious diseases of military importance
- vaccine development for prevention of bacterial sepsis and septic shock
- shigella vaccines
- malaria vaccines
- gonococcal peptide vaccine
- enterotoxigenic *E. coli* (ETEC) vaccine
- rickettsial diseases
- group A streptococcal vaccines
- polyvalent meningococcal vaccine
- prevention of Campylobacter diarrheal disease
- hepatitis virus vaccines
- establishment of diagnostic tests for infectious disease agents
- diagnosis of leishmaniasis
- development of drug therapies for infectious disease agents
- dengue virus vaccines
- viral hemorrhagic fever and encephalitis prevention and countermeasures
- identification and control of insect vectors of infectious diseases
- prevention of military HIV infection

M3: Medical Chemical Defense

Includes studies in the development of:

- medical countermeasures for vesicant agents
- a medical pretreatment for cyanide
- prophylactic therapeutics for chemical agents
- a reactive topical skin protectant
- medical countermeasures for respiratory agents
- chemical casualty management strategies and treatments

M4: Medical Biological Defense

Includes studies in the development of medical countermeasures for:

- *Yersinia pestis*
- brucellosis
- anthrax
- *Clostridium perfringens*
- Q-fever
- *Francisella tularensis*
- encephalomyelitis viruses
- variola
- Filoviridae
- physiologically active compounds
- sodium channel neurotoxins
- ricin
- staphylococcal enterotoxin B
- botulinum toxin
- venoms

M5: Human Systems Technology

Includes studies on:

- bioeffects of lasers
- laser impacts on performance
- treatment of laser-induced injury
- development of predictive models for a non-auditory exposure standard for blast overpressure
- development of occupational health protection criteria and exposure assessment technologies for toxic hazards arising from weapon systems and combat operations
- vibration
- bioeffects of electromagnetic radiation
- development of countermeasures for the effects of operational stress on military performance

- environmental injury
- development of methods, criteria, and predictive models for the risk of pulmonary injury in defeated armor scenarios

M6: Combat Casualty Care

Includes studies in:

- blood loss
- resuscitation
- secondary damage after hemorrhage
- soft tissue injury
- musculoskeletal injury
- combat stress injury
- burn injury
- anesthetics
- delivery systems

M7: Ionizing Radiation

Includes studies on:

- development of radioprotective compounds
- therapies for radiation-induced pathology
- bioeffects of ionizing radiation
- psychomotor effects of ionizing radiation
- mechanisms of radiation-induced patho-physiology

M8: Other Medical RDT&E

Includes studies in the areas of:

- breast cancer research
- pathophysiology
- occupational health
- vision
- free electron laser

NON-MEDICAL (N)

N1: Physical Protection

As previously indicated, excludes reporting military working animals and includes:

- developing hearing protection criteria
- mechanisms of and protection from military acoustic hazards
- ocular effects and performance of eye protective devices

N2: Physical Detection

Includes studies in the development of:

- biosensors
- chemical detection devices
- the Chemical Biological Mass Spectrometer (CBMS) detector
- auditory detection thresholds in marine mammals
- models of dolphin echolocation
- detection of biological warfare agents

N3: Offensive Weapons Testing

No studies performed in this category

N4: Other Non-Medical RDT&E

Includes studies in the areas of:

- environmental toxicology
- basic biological research
- human systems technology
- acoustics research
- chronobiology
- robotics
- pressure biology
- physiology

CLINICAL INVESTIGATIONS (C):

C1: Clinical Medicine

Research conducted includes a wide variety of clinical medical diseases/conditions which were not necessarily unique to the military. Includes studies in the areas of:

- burn treatment
- prophylaxis against toxic chemicals
- wound healing
- preservation of tissue sample morphology
- differentiation of brain tumors
- substances promoting repair of sound-sensing cells
- regulation of tracheal mucin secretion by retinoic acid

- breast cancer research
- mechanisms and treatment of renal pathophysiology
- effects of tumor necrosis factor on gonadotrophic activity
- treatment of immune-mediated hearing loss
- mechanisms of lung growth and compensation following injury
- testing of hepatitis-E vaccines

C2: Clinical Surgery

Includes studies in the areas of:

- adverse effects on wound healing of post-surgical treatments
- development of synthetic materials for surgical closures
- topical stimulants of skin healing following biopsies
- techniques of fiberoptic bronchoscopy
- laparoscopic cholecystectomy
- biomechanical and histological effects of artificial implants
- identification and development of improved implant materials
- evaluation of new techniques to remove seminal vesicle cysts
- electrohydraulic lithotripsy

C3: Other Clinical Investigations

None in FY95

TRAINING AND INSTRUCTIONAL (T):

T1: Training, Education, and/or Instruction for Personnel

Types of training include:

- animal technician training
- training of special forces medics
- investigator training in proper techniques used with animals
- physician training in medical or surgical procedures, etc.

The training locations included DoD laboratories or medical centers.

Does not include experimental or research related work.

T2: Other Training/Instruction

Includes training/instruction in the areas of:

- medical fellows/residents research projects
- veterinary fellows/residents research projects

ADJUNCTS AND ALTERNATIVES TO ANIMAL STUDIES (A):

A1: Adjuncts to Animal Use Research

Addresses those studies and uses which focused specifically on animal husbandry and care issues, and not directly on human medical, non-medical, or training issues.

A2: Alternatives to Animal Investigation

Includes studies which involve the use of animals that are designed to address directly and specifically issues of reduction, refinement, or replacement options for which animals are currently used; this classification does not include studies that are specifically directed at military RDT&E, clinical studies, or training requirements that may employ the animal alternatives of refinement, reduction, or replacement in the performance of the required protocols.

A3: Other Alternatives/Adjuncts

None in FY95

CLASSIFIED SECRET OR ABOVE STUDIES (S):

S: Animals on Studies Classified SECRET or Above

Includes studies in which the information concerning the study may not be released for public knowledge because of the impact on national security. The total numbers of animals in this category cannot be reported. However, the total number is less than 0.1% of all animals used by the DoD in FY95.

ANIMAL BREEDING STOCK (B):

B: Animal Maintained for Breeding

Includes:

- large animals maintained at the facility or supported through contract funds for breeding purposes to supply offspring to be used in animal-based research for particular work units or protocols
- breeding animals and offspring not assigned to specific work units or protocols

OTHER ANIMAL USE CATEGORIES (O):

O: Other Animal Use Purposes

Includes:

- Animals awaiting assignment to protocols
- Environmental monitoring

Appendix L

Summary of Animal Use Data by Category

Appendix L

Summary of Animal Use Data by Category

MILITARY DENTISTRY		
Category	Species	Animals Used
M1	MOUSE	60
M1	RABBIT	18
M1	RAT	14
M1	RICE RAT	64
	MILITARY DENTISTRY TOTAL	156

INFECTIOUS DISEASES		
Category	Species	Animals Used
M2	AFRICAN GREEN MONKEY	6
M2	ARMANIAN HAMSTER	5
M2	BANDICOOT RAT	7
M2	BIRD	8
M2	CHICKEN	141
M2	CYNOMOLGOUS MONKEY	19
M2	DOG	114
M2	FERRET	12
M2	GERBIL	31
M2	GOAT	1
M2	GOOSE	4
M2	GUINEA PIG	1,501
M2	HAMSTER	1,837
M2	HORSE	19
M2	MASTOMY	250
M2	MONKEY	85
M2	MOUSE	223,400
M2	PIG	204
M2	PIGTAIL MONKEY	101
M2	RABBIT	1,026
M2	RAT	2,140
M2	RHESUS MONKEY	464
M2	ROBIN	7
M2	SEA SLUG	26
M2	SHEEP	115
M2	SQUIRREL MONKEY	15
M2	STARLING	7
	INFECTIOUS DISEASES TOTAL	231,545

MEDICAL CHEMICAL DEFENSE

Category	Species	Animals Used
M3	BULLFROG	5
M3	DOG	21
M3	EEL	1
M3	FROG	60
M3	GUINEA PIG	1,570
M3	MOUSE	5,080
M3	PIG	72
M3	RABBIT	274
M3	RAT	2,498
M3	RHESUS MONKEY	127
M3	TADPOLE	250
M3	WEANLING PIG	40
	MEDICAL CHEMICAL DEFENSE TOTAL	**9,998**

MEDICAL BIOLOGICAL DEFENSE

Category	Species	Animals Used
M4	AFRICAN GREEN MONKEY	8
M4	BURRO	1
M4	COW	0
M4	CYNOMOLGOUS MONKEY	137
M4	GOAT	15
M4	GOOSE	15
M4	GUINEA PIG	896
M4	HAMSTER	337
M4	HORSE	77
M4	MOUSE	44,003
M4	RABBIT	323
M4	RAT	1,432
M4	RHESUS MONKEY	210
M4	SHEEP	84
	MEDICAL BIOLOGICAL DEFENSE TOTAL	**47,538**

HUMAN SYSTEMS TECHNOLOGY

Category	Species	Animals Used
M5	AFRICAN TOAD	5
M5	CAT	3
M5	CHINCHILLA	19
M5	DOG	52
M5	FISH	0
M5	FROG	171
M5	GUINEA PIG	73
M5	HAMSTER	280
M5	MEDAKA FISH	1,850
M5	MOUSE	594
M5	PIG	198
M5	PIGEON	23
M5	RABBIT	103
M5	RAINBOW TROUT	20
M5	RAT	3,111
M5	RHESUS MONKEY	69
M5	SEA SLUG	25
M5	SHEEP	10
M5	TOAD	45
M5	ZEBRA FISH	10,000
	HUMAN SYSTEMS TECHNOLOGY TOTAL	**16,651**

COMBAT CASUALTY CARE

Category	Species	Animals Used
M6	BABOON	23
M6	BONNET MONKEY	2
M6	CAT	24
M6	DOG	50
M6	GOAT	4
M6	GUINEA PIG	131
M6	HAMSTER	180
M6	MOUSE	17,204
M6	PIG	405
M6	RABBIT	468
M6	RAT	6,772
M6	SHEEP	96
	COMBAT CASUALTY CARE TOTAL	**25,359**

Appendix M

Walter Reed Army Institute Policy 93-27 - Laboratory Animals Environmental Enrichment Program

DEPARTMENT OF THE ARMY
WALTER REED ARMY INSTITUTE OF RESEARCH
WALTER REED ARMY MEDICAL CENTER
WASHINGTON, D.C. 20307-5100

IN REPLY REFER TO.

SGRD-UWN (310-2d) 13 DEC 93

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: WRAIR Policy Letter 93-27, Laboratory Animal Environmental Enrichment Program

1. NONHUMAN PRIMATES

a. Applicable Division of Veterinary Medicine Standard Operating Procedures:

SOP-DAR-760 - Environmental Enrichment - General
SOP-DAR-761 - Environmental Enrichment of Nonhuman Primates

b. PSYCHOLOGICAL WELL-BEING:

(1) Social Grouping. The Division of Veterinary Medicine (DVM) has, as a goal, the pairing or grouping of as many nonhuman primates (NHP) as is feasible. While recognizing that group housing of most nonhuman primates is the ideal, the DVM is constrained by space and personnel limitations. Even without these constraints, aggressive behavior exhibited by some NHPs precludes the pairing or grouping with conspecifics.

(a) Thirty-two (32) socialization units housing rhesus monkeys in compatible pairs are in use. An additional eight (8) are reserved for bi-weekly cage changeouts.

1) Animals selected for pairing are chosen based on mutual compatibility.

2) Selection criteria for pairing are as follows:

a) Young animals

b) Animals with behavioral problems such as self-mutilation or excessive grooming

c) Adult females

d) Younger animals paired with an adult male

e) Adult males (after pulpectomy of canine teeth)

(3) An environmental enrichment log is maintained by the Division of Veterinary Medicine at Building 40 and the Gillette Building. Veterinary personnel record the details of daily enrichment activities such as type of enrichment, response to new types of enrichment, and the name of person administering the enrichment. An additional environmental enrichment used in a laboratory setting is a food pellet dispenser that provides positive reinforcement for foraging behavior. Logs should also be maintained by investigators in laboratory settings to document environmental enrichment.

(a) New World Monkeys

1) Nest boxes.

2) Pseudo-arboreal devices (hanging hoses, PVC pipes).

3) Platforms.

4) Variation in food:

a) fresh fruit (apples, oranges) three times weekly.

b) peanut butter in an ice cream cone.

c) hand-fed foods such as marshmallows.

5) Reversed lighting cycle

(b) Old World Monkeys

1) Forage feeding devices charged with raisins, cereal.

2) Clutch balls.

3) Puzzle feeders

4) Television (rotated through the rooms)

5) Peripheral suspended activity device

6) Variation in food:

3) After pairing, animals are monitored for feeding habits, stereotypical behavior, etc., in order to insure that the dominant animal within the pair does not block access to food or water and that the pair remains compatible. Two forage boards per pair are used to ensure equal access to food.

(b) *Aotus* monkeys are maintained in family groups. Older juveniles are removed after one year and, when possible, pair mated.

(2) **Single Housing.** All individually housed NHPs have visual contact with each other. In case visual contact cannot be maintained, mirrors will be placed on the wall opposite old world monkeys as a visual enrichment. (New world monkeys do not recognize "self", and therefore, mirrors represent a threat rather than an enhancement of the environment).

(3) **Isolation.** No animals are isolated from sensory contact with conspecifecs unless they are separated due to illness, behavioral problems, or protocol requirements.

(a) If a protocol requires isolation of an animal, the WRAIR Laboratory Animal Care and Use Committee (LACUC) must approve the isolation period and alternative enrichment will be provided to the animal. The animal will be monitored and the exception to policy will be reviewed by the LACUC monthly.

(b) The attending veterinarian has the authority to isolate an animal for medical reasons. If this is necessary, the decision will be reviewed monthly and annotated in the medical records, to include the reason for isolation, anticipated duration of isolation, and plan for enrichment.

c. **ENVIRONMENTAL ENHANCEMENT:**

(1) Enrichment of the physical environment (primary enclosure) is accomplished utilizing information on species-typical activities and their physiological capabilities. For instance, *Aotus* monkeys do not have the manual dexterity of an old world monkey. Therefore, "games" requiring dexterity that provide enrichment for rhesus monkeys are inappropriate for *Aotus* monkeys.

(2) The standards are intentionally broad in order to utilize the imagination of the personnel at each facility. DVM personnel will continue to explore environmental enhancement for each species of monkey housed within WRAIR animal facilities.

a) fresh fruit or vegetables (oranges, apples, bananas, sweet potatoes) three times weekly.

b) hand-fed peanuts, Prima-Treats

c) air-popped popcorn prepared in the animal room

d) yogurt/raisin/peanut butter-filled Kong Toys or cones

e) Gatorade ice cubes, Gatorade in bottles

d. SPECIAL CONSIDERATIONS:

(1) Animals showing psychological stress through behavior or appearance will:

(a) be evaluated by a veterinarian.

(b) be moved within the room or, if necessary, isolated.

(c) have a high priority for pair housing.

(2) Restraint devices:

(a) Animals will not be maintained in restraint devices unless approved by the WRAIR LACUC. Such restraint will be limited to the shortest period possible.

(b) If restraint is longer than 12 hours, special provisions must be made by the researcher, after consultation with the veterinarian, and with the approval of the LACUC, to provide the NHP the opportunity for unrestrained activity for at least one hour daily. A socialization cage would be ideal to meet this requirement.

2. DOGS AND CATS

a. DEFINITIONS:

(1) Exercise. Physical activity either by free movement in a required cage or removal of the animal from its primary enclosure with section personnel in attendance at all

times. Physical activity must be allowed for a minimum of five minutes either in an indoor exercise area or outside on a leash. Personnel monitoring the exercise will provide positive play stimulation during the exercise period. Forced exercise methods or devices such as swimming, treadmills, or carousel-type devices will not meet exercise requirements.

(2) **Positive Physical Contact (PPC).** Must include petting, stroking, or other touching which is beneficial to the well-being of the animal.This activity must occur for a minimum of five minutes per animal.

(3) **Required Space.**

(a) The square footage required for an individual dog, using the following formula: measure the length of the dog (tip of nose to base of tail) in inches; add 6 to this figure; multiply this figure by itself (i.e. if the length of the dog is 24 inches, add 6, multiply 30 x 30); divide that figure by 144 (900/144). This is the required square footage for that individual dog.

(b) Currently, required space for cats is 2.5 sq. ft. of floor space per cat. **As of February 15, 1994:**

1) Each primary enclosure housing cats must be at least 24 in. high (60.96 cm);

2) Cats up to and including 8.8 lbs (4 kg) must be provided with at least 3.0 sq.ft. (0.28 sq. m);

3) Cats over 8.8 lbs (4 kg) must be provided with at least 4.0 sq. ft. (0.37 sq. m).

b. **EXERCISE:**

(1) Canine runs measure 4 x 10 ft., which provides 40 sq.ft. of space. Based on average size of a beagle and average size of a foxhound, the two breeds historically used in this institute, the canine runs could house five beagles or three foxhounds, each. Depending on space requirements, dogs will be housed either individually or 2-3/ run. This will fulfill the exercise requirement because they are either housed in groups and the runs provide greater than 100 percent of the required space for each dog if maintained separately, or they are housed individually and the space is greater than two times the required floor space for that dog.

(2) Dogs assigned to the Department of Instruction are housed as outlined above. They are also walked daily when a class is in session.

(3) Cats are group housed 5-6 per 52.5 cubic foot (10.5 sq. ft. x 5 ft.) cage with an additional 13.5 square feet of resting shelves. A ramp connects the three shelves. This meets the requirements of the current law as well as future requirements effective 15 February, 1994. Cats are provided with toys (balls, chains etc.) in the cages. Twice weekly they are brushed and fed a canned food treat.

c. **COMPATIBILITY AND CONFINED HOUSING:**

(1) Animals will be monitored for compatibility.

(2) If a protocol requires individual housing of a dog or cat, this can be accomplished.

(3) If a protocol requires confined housing, special provisions must be made by the researcher, after consultation with the veterinarian, and with the approval the LACUC, to provide the dog the opportunity for daily exercise. The frequency, method, and duration of the opportunity for exercise shall be determined by the attending veterinarian in consultation with,and approval by the LACUC.

d. **EXEMPTIONS:**

(1) The veterinarian may determine that exercise is inappropriate due to health, condition, or well-being. All veterinarian initiated exemptions must be documented in the individual animals medical record. Unless the exemption is permanent, the record must be reviewed monthly, the exemption evaluated, and the decision annotated in the medical record by the attending veterinarian.

(2) LACUC-approved protocols which demonstrate scientific reasons that exercise of the dogs is inappropriate must have a plan for review of this exemption. The LACUC must review its exemption at least annually.

e. **POSITIVE PHYSICAL CONTACT:**

(1) Canine and feline housing within WRAIR provides physical and sensory contact with other animals. Because sensory contact is provided, positive physical contact with humans is not required. However, DVM personnel will try, given manpower

restraints,to provide positive human contact to the dogs and cats on a daily basis.

(2) Dogs and cats that are isolated from other animals will be removed from their primary enclosure, if permitted by the attending veterinarian, and played with for a minimum of five minutes, daily.

(3) Dogs assigned to the Department of Instruction (DOI) are given dog biscuits once per week and groomed as needed. When a class is in session at DOI, the dogs are given a dog biscuit three times per week and groomed daily. When a class is not in session, the dogs are given a biscuit once per week and groomed as needed.

f. **DOCUMENTATION:**

A log of all environmental enrichment, positive physical contact and exercise activities will be posted at the entrance to each dog and cat housing room. This log will be available for any personnel involved in these activities to record the type and duration of activities. A compilation of these records will be maintained in room #1263 at the leased facility (Gillette Building) by a senior Animal Care Specialist.

FOR THE DIRECTOR:

RAYMOND D. Laurel
2LT, MS
Adjutant

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Harry Salem

RESEARCH AND TECHNOLOGY DIRECTORATE

September 1993

U.S. ARMY
CHEMICAL
AND BIOLOGICAL
DEFENSE AGENCY

Aberdeen Proving Ground, Maryland 21010-5423

Advances in Animal Alternatives for Safety and Efficacy Testing

EDITORS:

HARRY SALEM, PH.D.
U.S. Army Edgewood Research Development and Engineering Center

SIDNEY A. KATZ, PH.D.
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Appendix P

Letters from Dr. Martin Stephens

The Humane Society of the United States
2100 L Street, N.W.
Washington, D.C. 20037
(202) 452-1100
FAX (202) 778-6132

February 7, 1992

Dr. Harry Salem
U.S. Army CRDEC
SMCCR-RST
Aberdeen Proving Ground, MD 21010

Dear Harry:

Congratulations on organizing what was clearly a successful conference on alternatives. What was particularly heartening from my perspective was all the new faces I had not seen before on the alternatives "circuit." We need that new blood and diversity.

If you are organizing another conference on alternatives, and could use a speaker from an animal protection organization, just let me know. I would be happy to oblige.

Again, congratulations.

Best wishes,

Martin L. Stephens, Ph.D.
Vice President
Laboratory Animals

June 1, 1994

Harry Salem, Ph.D.
Edgewood Research, Development & Engineering Center
Attn: SCBRD-RTL
U.S. Army
Aberdeen Proving Ground, Maryland 21010-5423

Dear Harry:

Congratulations on organizing another successful conference on alternative methods for safety testing. I appreciated the opportunity to participate in the session on oral, ocular, and dermal irritation.

You and I discussed tracking down some of the military's historical data on human eye irritation. These data are based on clinical studies that were apparently conducted at the Aberdeen Proving Ground many years ago. Given the importance attached to good human data at the conference, I think the military could do the alternatives community a big service by locating these data and assessing their value in evaluating alternative methods of eye irritation assessment. This project could also help the military fulfill its congressional mandate to advance the field of alternatives.

Let me know what you think.

Best wishes.

Sincerely,

Martin Stephens

Martin L. Stephens, Ph.D.
Vice President
Laboratory Animal Issues

The Humane Society of the United States
2100 L Street, NW, Washington, DC 20037
(202) 452-1100 FAX (202) 778-6132

Appendix Q

National Research Council Fellowship in Alternatives Research at the U.S. Army Edgewood Research, Development, and Engineering Center

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The Life Sciences Department is comprised of the following teams: Biosciences, Environmental Technology, Inhalation Toxicology, Respiratory Protection, and Veterinary Services. Our laboratories are accredited by the American Association for Accreditation of Laboratory Animal Care. In addition, studies are examined by a quality assurance unit to ensure that they comply with good laboratory practices.

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